11/9/2018

Supplier	Name	Metals	TW		TW Metals		\$84.00 TW Metals		TW Metals
	lotal	\$115.84	\$206.31		\$515.80		\$84.00		\$246.00 TW
g Past	s Due	0	0						97
Agin	Days				Ö		0		0
Receive Price/Hnis		\$ 5.00 / ft	\$ 3.44 / ft		\$ 2.58 / 11		4.20 / ft		\$ 6.15/R
Receive	Date	11/9/2018	11/9/2018		11/9/2018 \$	1	11/9/2018 \$ 4.20 / R		11/9/2018 \$ 6
Status	-	NO N	Stock 1	1	Stock 11				
ainer	0 5			T					Stock
Cont	C476574	00710	\$126572		S126573	0436574	* 1007 C		S126575
Received Accounting Container Quantity Job No No							,		Ø
Received			09	000	000	20			04
Due Date	11/9/2018							+	
Order	24		48	192		12		24	Ţ.
Equipment Order ID Qty								+	
Part Project No				+		+		+	
Part				+		+		+	
Description	304/316 Pipe .675	Thickness: Thickness: TP304/TP316 STAINLESS STEEL SEAMLESS PIPE AS PER ASTM A312/ASME SA312	304 Round Tube 500 x .049W: MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASTM A213 OR ASTM A269 receive	304 Round Tube	MATERIAL: AISI MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASME SA213 OR ASME SA213 OR	304 Round Tube	MATERIAL. AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A2/3 OR ASME SA2/3 OR ASTM A2/69 receive	304 Round Tube	1,250 x, 125W; MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASTM A213 OR ASTM A269 receive
Furchased Item	M304P0.675W.091		M304TR0.500W.049	M304TR0.750W.049	: 2 m 00 F 4 4 4 ±	M304TR0.875W.065 30	2	M304TR1.250W.125 304	MASSER SER SER SER SER SER SER SER SER SER
SILLS	Net 30		2	M		M3		M30	
9	_								
No	2		7	4		ro.		9	
No	TWM001-		,						
10000	F0041405 TWM001-								

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1	
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11/9/2018

Supplier		TW Metals	TW Metals	
Total	\$332.52	\$61.80	\$163.20	\$1.725.47
Past				64
Aging	Days	0	0	+
Price/Unit Aging	\$ 3.08 / R	65.15/H	\$3.40/11	
Receive	11/9/2018	11/9/2018 \$	11/9/2018	
Status	Stock	Stock	Stock 1	+
Container		S126577 S	S126578 SI	
Received Accounting Container Quantity Job No			w	
Received Quantity	0.00	12	84	511
Due Date				H
Order	100	12	60	460
Equipment Order ID Qty				Total:
For Part Project No				
	- 1 2:	2 5 5 E		
Description	Aluminum Tube 3125 X. 058W: MATERIAL: 6061- TG/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QC-A-200/8 OR A-225/8 OR AMS 4080 OR AMS 4083 OR ASTM B210 OR ASTM B211 receive ft	6061-T6 Round Tube 0.625 x.125W	6061-T6 Round Tube .375 X.035W: MATERIAL: 6061- TEGREZ/T6510/T6511 SEAMLESS TUBING AS PER WW-1-700/8 OR CQ-A-200/8 OR AMS A-25/8	
Purchased Item	80		M606176T0.375W.035 60	
Terms		Σ	SW .	
No No	_			
Supplier Item No		0	7)	
PO No				

Plex 11/9/2018 5:48 PM dart. Tollis. Andrew



Dart Aerospace Ltd. 1270 Aberdeen St Hawkesbury, ON **K6A 1K7** Canada

Tel (613) 632-5200

PURCHASE ORDER PO041405

Supplier:

TWM001-VU

TW Metals PO Box 933014

Altanta, GA 31193-3014 USA

Phone: 585 768 5600

Fax: 585 768 5601

PO No:

PO041405

PO Date:

10/22/18 10/30/18

Due Date: Purchase Order

Revision:

Ship-To Contact:

Revision Date:

Ship To:

1270 Aberdeen Street

Hawkesbury

K6A 1K7 Canada

Phone: 613-632-5200

Via:

Ground

Lavoie, ChantalPhone: clavoie@dartaero.com

Pymt Terms:

Net 30

Freight Terms:

Special Comments:

					Items							
Line Item	Job	Part	Supplier Part No		Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extende
1		M2024T3T1.000W.065		2024T3 Tubing 1" OD x 0.65" Thick : MATERIAL: 2024- T3 SEAMLESS ALUMINUM TUBING SPECIFICATION; WW-T-700/3, AMS 4088 OR AMS-WW-T- 700/3 OR ASTM B210 receive ft	Firmed		10/30/18	312 ft		312 ft		\$2,340.00
ine Item Not	- game .			45 2	-				1.	41 I		
AT AT		M304P0.675W.091		304/316 Pipe .675 OD x .091 Wall Thickness : MATERIAL: TP304/TP316 STAINLESS STEEL SEAMLESS PIPE AS PER ASTM A312/ASME SA312 receive ft	Firmed	The property of the second sec	10/30/18	24 ft	23.167	24 ft	\$5.00/h	\$120.00
at at		M304TR0.500W.049	: : : : : : :	304 Round Tube 500 X .049W MATERIAL: AISI 304/316 SS SEAMLESS ROUND FUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 eceive ft	Firmed		10/30/18	48 ft	60ft	48 ft	\$3.4385/ft B/U/04	*



Dart Aerospace Ltd. 1270 Aberdeen St Hawkesbury, ON K6A 1K7 Canada

PURCHASE ORDER PO041405

Tel (613) 632-5200

					tems							
Line Item	Job	Part	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
M		M304TR0.750W.049		304 Round Tube .750 X .049W : MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft	Firmed		10/30/18	192 ft	2 ouft	MA MA	\$2.579/A	
5 K		M304TR0.875W.065		304 Round Tube 875 X .065W : MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft	Firmed		10/30/18	12 ft	2 oft	1	18/11/04	
A		M304TR1.250W.125		304 Round Tube 1.250 X .125W : MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft	Firmed	-	10/30/18	24 fi	Yoft	24 ft	\$6.15/11	\$147.60
X	The state of the s	M6061T6T0.3125W.058		Aluminum Tube 3125 X .058W : MATERIAL: 6061- T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ A-225/8 OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft	And the second state of th	1 -	10/30/18	100 f	10851	+	18/11/04	
A A		M6061T6T0.625W.125		6061-T6 Round Tube 0.625 X.125W : MATERIAL: 6061- T6/T62/T6510/T651: SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ A-225/8 OR AMS 4080 OR AMS 40 8: OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft			10/30/1	8 12	B.L.		1 \$5.15/h	



Dart Aerospace Ltd. 1270 Aberdeen St Hawkesbury, ON K6A 1K7 Canada

PURCHASE ORDER PO041405

Tel (613) 632-5200

					Items			 		
_ine tem	Job	Part	Supplier Part No	Description	Status	Account	Due Date	Received Quantity	Unit Price (USD)	Extende Price
and the second s		M6061T6T0.375W.035		6061-T6 Round Tube .375 X.035W : MATERIAL: 6061- T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ- A-225/8 OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft			10/30/18	98A	\$3.40/ft 18/11/04	\$163.2

Order Notes

Procurement Quality Clauses

A005 right of entry

A012 chemical and physical test report

A016 personnel qualification

A017 raw material identification (as applicable)

A026 certification of material conformance

A041 quality management system

A042 dart notification by supplier

A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.



Plex 10/22/18 9:05 AM dart.lavoie.chantal





ORDER NO.: 80970737 FROM: CHIC PAGE 1

3T NUMBER: 1203820 NET WGT: 151.292 REQ.DATE: 11/09/18 EARLY RT AEROSPACE LTD

O ABERDEEN ST

SHIP TO:

DART AEROSPACE LTD

JADA

HAWKSBURY ON

1270 ABERDEEN ST

CN K6A 1K7

ONTARIO CANADA CN K6A 1K7

WIDTH LENGTH

LESPERSON: MIKE ANDERSON SHIP BY: 11/06/18

RMS: NET 30 DAYS VIA: COMMON CARRIER PREPAID

ST ORD NO.: PO041405 FREIGHT: PREPAID

NE ITEM DESCRIPTION WIDTH LENGTH)1 43260 D2024-T3 1 OD X .065 WA

12 FT ML

ORD QTY 312.000 FT INVOICE QTY SHIPPED QTY WT 312.000 FT 312.000 FT 71.436

PCS 26

₹T#: M2024T3T1.000W.065

1 TEST REPORTS REQUIRED **

1 CERTS REQUIRED **

IN: EAR99 Export License: NLR Expiration Date: 0/00/00 :49394608 HT:F002819470001 PC: 26 CUSTOMER QTY: 312.000 UOM FT SLB/CL:227053

)2 38420 SMLS 304/L A-312 3/8 SCH 40

 J#
 ORD QTY
 INVOICE QTY
 SHIPPED QTY
 WT

 20.000 FT
 23.167 FT
 23.167 FT
 13.271

₹T#: M304P0.675W.091

1 TEST REPORTS REQUIRED **

1 CERTS REQUIRED **

CN: 2B999.g Export License: NLR Expiration Date: 0/00/00 :49383265 HT:11P046 PC: 1 CUSTOMER QTY: 23.167 UOM 1

)3 37241 SMLS CD 304/L A269 1-1/4 X .120WA

20 FT

J# ORD QTY 40.000 FT

INVOICE QTY SHIPPED QTY WT 40.000 FT 57.917

PCS

₹T#: M304RT1.250W.125

1 TEST REPORTS REQUIRED **

1 CERTS REQUIRED **

IN: 2B999.g Export License: NLR Expiration Date: 0/00/00





ORDER NO.: 80970737 FROM: CHIC PAGE 2

RT AEROSPACE LTD

70 ABERDEEN ST

VKESBURY ON

3T NUMBER: 1203820 NET WGT: 151.292 REQ.DATE: 11/09/18 EARLY

DART AEROSPACE LTD 1270 ABERDEEN ST

HAWKSBURY ON ONTARIO CANADA

CN K6A 1K7

LESPERSON: MIKE ANDERSON ONTARIO CANADA

CN K6A 1K7

SHIP BY: 11/06/18

COMMON CARRIER PREPAID

FREIGHT: PREPAID

RELEASE NO.:
RECEIVING PHONE:

49385117 HT:N180219AS15 AP PC: 2

F:CHINA

HAWKSBURY ON ONTARIO CANADA

CN K6A 1K7

SHIP BY: 11/06/18

COMMON CARRIER PREPAID

RELEASE NO.:
RECEIVING PHONE:

WIDTH LENGTH

CUSTOMER QTY: 40.000 UOM FT

)4 41723 D6061-T6 5/16 OD X .058 WA

12 FT ML

ORD QTY INVOICE QTY SHIPPED QTY WT 108.000 FT 108.000 FT 5.897

PCS 9

RT#: M6061T6T0.3125W.058

1 TEST REPORTS REQUIRED **

1 CERTS REQUIRED **

IN: EAR99
Export License: NLR
:49380591 HT:2927553 FT PC: 9
CUSTOMER QTY: 108.000 UOM FT
CUNITED STATES MFG:UNITED STATES SLB/CL:2927553

)5 42588 D6061-T6 5/8 OD X .125 WA

T#: M6061T6T0.625W.125

1 TEST REPORTS REQUIRED **

1 CERTS REQUIRED **

IN: EAR99 Export License: NLR Expiration Date: 0/00/00 :49383418 (HT:F002625360001) PC: 1 CUSTOMER QTY: 12.000 UOM FT SLB/CL:225211

OKERS KUEHNE AND NAGEL LTD

PACK INFO -----

CUBIC FT 5.5556





SHIP TO:

Packing Slip

ORDER NO.: 80970737 FROM: CHIC

11/06/18

PREPAID

COMMON CARRIER

PAGE 3

3T NUMBER: 1203820 NET WGT:

151.292 REQ.DATE: 11/09/18 EARLY

DART AEROSPACE LTD

1270 ABERDEEN ST

HAWKSBURY ON

ONTARIO CANADA

D TO:

RT AEROSPACE LTD

70 ABERDEEN ST

VKESBURY ON

JADA

CN K6A 1K7

LESPERSON:

NET 30 DAYS

RMS:).B.:

SHIPPING POINT

ST ORD NO.:

ITEM DESCRIPTION REDDICRATE

PO041405

MIKE ANDERSON SHIP BY:

VIA: FREIGHT:

RELEASE NO.:

RECEIVING PHONE:

1.000

WIDTH LENGTH

129.000

4.0000 284.0000 4 CUBIC FT 2.6296

CN K6A 1K7

2.000 250.000

: RR 000 -

UNLOAD TYPE: NONE SPECIFIED

DATE	SHIPPED	





ORDER NO.: 80970737

FROM: CHIC

PAGE 4

3T NUMBER: 1203820

JD TO:

RT AEROSPACE LTD 70 ABERDEEN ST VKESBURY ON

RMS:

).B.:

JADA

CN K6A 1K7

NET WGT:

MIKE ANDERSON

NET 30 DAYS SHIPPING POINT

ST ORD NO .:

PO041405 1: COMMON CARRIER

EIGHT: PREPAID

LEASE NO .:

ESPERSON:

CEIVING PHONE:

151.292 REQ.DATE: 11/09/18 EARLY

SHIP TO:

DART AEROSPACE LTD 1270 ABERDEEN ST HAWKSBURY ON

ONTARIO CANADA

CN K6A 1K7

SHIP BY:

235 TUBEWAY

CAROL STREAM

IL 60188

11/06/18

w Metals MSDS data is available on our web site at www.twmetals.com. MSDS ta can be found under the Technical Resources Tab, Product Statistics Data and the TW Metals MSDS's heading. If you do not have web site access a may telephone 610-458-1300 and we will mail or fax a copy of our current

"CERTIFICATE OF CONFORMANCE"

√ Metals certifies that the material supplied on this purchase order and itained in the heat/lot number referenced above has been manufactured, spected, and tested in accordance with the material specification. These cords are on file at TW Metals. Packaging material for shipments to Europe d China consists of manufactured wood products and complies with the ropean emergency measures for coniferous non-manufactured wood packing

ectronically Generated Document-Valid Without Signature Date: 11/06/18

ese commodities have been exported from the United States in accordance th the U.S. export control laws, export administrations regulations. version contrary to U.S. law prohibited.





ORDER NO.: 60668340 FROM: CRAN PAGE 1

CUST NUMBER: 1203820 NET WGT: 100.851 REQ.DATE: 11/12/18 EARLY

DART AEROSPACE LTD 1270 ABERDEEN ST HAWKESBURY ON

CANADA

CN K6A 1K7

SHIP TO: DART AEROSPACE LTD

1270 ABERDEEN ST

HAWKSBURY ON

ONTARIO CANADA CN K6A 1K7

SALESPERSON: MIKE ANDERSON SHIP BY: 11/07/18
TERMS: NET 30 DAYS VIA: COMMON CARRIER
F.O.B.: SHIPPING POINT FREIGHT: PREPAID
CUST ORD NO.: PO041405 RELEASE NO.:

RECEIVING PHONE:

LINE ITEM DESCRIPTION

0001 36506 SMLS CD 304/L A269 1/2 OD X .049 WA

WIDTH LENGTH

20' MI.

PCS 3

CLN# ORD QTY INVOICE OTY SHIPPED QTY WT 60.000 FT 60.000 FT 60.000 FT 14.155 PART#: M304TR0.500W.049

** 1 TEST REPORTS REQUIRED **

** 1 CERTS REQUIRED **

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00 PO:49380769 HT:N171009AS12 PC: 3 CUSTOMER QTY: UOM SLB/CL:180419769-10

0002 36860 SMLS CD 304/L A269 3/4 OD X .049 WA

20' CL

CLN# ORD QTY INVOICE QTY 200.000 FT 200.000 F 200.000 FT)

SHIPPED OTY 200.000 FT 73.344

PCS 10

PART#: M304TR0.75W.049 (

** 1 TEST REPORTS REQUIRED **

** 1 CERTS REQUIRED **

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00 PO:49385121 HT:N180118AS01 PC: 10 CUSTOMER QTY: UOM SLB/CL:18MTC-0725121-07

0003 36969 SMLS CD 304/L A269 7/8 OD X .065 WA

20 ° CL

CLN# ORD QTY INVOICE QTY SHIPPED QTY 20.000 FT 20.000 FT

SHIPPED QTY WT 20.000 FT 11.244

PCS

PART#: M304TR0.875W.065

** 1 TEST REPORTS REQUIRED ** ** 1 CERTS REQUIRED **

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00





			ORDER	No.:	60668	340	FROM	: CRAN	PAGE	2
SOLD	1203820	NET	WGT:	100 SF	0.851 HIP TO	REQ.	DATE:	1/12/18	EARLY	

DART AEROSPACE LTD 1270 ABERDEEN ST HAWKESBURY ON

CANADA

CN K6A 1K7

SALESPERSON: MIKE ANDERSON TERMS: NET 30 DAYS

TERMS: F.O.B.: F.O.B.: SHIPPING POINT CUST ORD NO.: PO041405

LINE ITEM DESCRIPTION

PO:49377294 HT: X1709608

MFG:CHINA

RECEIVING PHONE:

WIDTH LENGTH

CUSTOMER QTY:

SLB/CL:180127-10

HAWKSBURY ON ONTARIO CANADA

SHIP BY:

DART AEROSPACE LTD

1270 ABERDEEN ST

VIA:
FREIGHT: COMMON CARRIER PREPAID

12 FT MI.

11/07/18

CN K6A 1K7

UOM

0004 41879 D6061-T6 3/8 OD X .035 WA

CLN# ORD QTY INVOICE CTY 48.000 FT

SHIPPED QTY

48.000 FT 2.108

WT

PCS 4

PART#: M6061T6T0.375W.035

** 1 TEST REPORTS REQUIRED **

** 1 CERTS REQUIRED **

ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00 PO: 49392322 HT.F002772010001 PC: 4 CUSTOMER QTY: UOM MLT:UNITED STATES MFG:UNITED STATES SLB/CL:226651

BROKERS KUEHNE AND NAGEL LTD

PACK INFO AREA TYPE OF PKG NEW PEN REDDICRATE Orders In Package - 1

PKGS GRS WEIGHT WIDTH LENGTH HGHT 1.000 160.851 4.0000 246.0000 5

Box No - TWPK18044189 CUBIC FT 2.8472

1.000 160.851

BY: Tom Weaver

RT 000-

1

UNLOAD TYPE: NONE SPECIFIED

DATE SHIPPED

DATE FILLED

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE THANK YOU FOR THIS ORDER PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL REVIEW.

http://www.twmetals.com/invoice-terms.html





ORDER NO.: 60668340

FROM: CRAN

CUST NUMBER: 1203820 NET WGT:

100.851 REQ.DATE: 11/12/18 EARLY

SOLD TO:

SHIP TO:

DART AEROSPACE LTD

1270 ABERDEEN ST

DART AEROSPACE LTD 1270 ABERDEEN ST

HAWKESBURY ON

HAWKSBURY ON ONTARIO CANADA

CN K6A 1K7

CANADA

CN K6A 1K7

SHIP BY:

11/07/18

TERMS:

VIA:

MIKE ANDERSON NET 30 DAYS SHIPPING POINT

27 ENGLEHARD DRIVE MONROE TWP

NJ 08831

F.O.B.: CUST ORD NO .:

SALESPERSON:

PO041405 COMMON CARRIER

FREIGHT:

PREPAID

RELEASE NO .:

RECEIVING PHONE:

"TW Metals MSDS data is available on our web site at www.twmetals.com. MSDS data can be found under the Technical Resources Tab, Product Statistics & Data and the TW Metals MSDS's heading. If you do not have web site access you may telephone 610-458-1300 and we will mail or fax a copy of our current MSDS data to your location."

"CERTIFICATE OF CONFORMANCE"

"TW Metals certifies that the material supplied on this purchase order and contained in the heat/lot number referenced above has been manufactured, inspected, and tested in accordance with the material specification. These records are on file at TW Metals. Packaging material for shipments to Europe and China consists of manufactured wood products and complies with the European emergency measures for coniferous non-manufactured wood packing Electronically Generated Certificate-Valid without signature Date: 11/07/18

These commodities have been exported from the United States in accordance with the U.S. export control laws, export administrations regulations. Diversion contrary to U.S. law prohibited.





http://Online.KaiserAluminum.com

KAISER ALUMINUM FABRICATED PRODUCTS, LLC 6573 W. WILLIS ROAD CHANDLER, AZ 85226

CUSTOMER PO NUMBER		CUSTOMER PART NUMBER:	PRODUCT DESCRIPTIO	N:			
M49394608-1		43260	Drawn Seamless	Tube/Pine			
KAISER ORDER NUMBER: LINE ITEM:		SHIP DATE:	KAISER LOT NUMBER:	ALLOY:	TEMPER:		
227053	001	09/28/2018	F00281947	2024	Т3		
WEIGHT SHIPPED:	QUANTITY:	B/L NUMBER:	DIAM/DAF/THKNS:	WIDTH:	LENGTH:		
379.000 LB	138.000 PC	CS 231219			12.000 FT		
SHIP TO:			SOLD TO:		12.000 11		
TW METALS INC 235 WEST TUBEW CAROL STREAM, I			SUITE 204	TW METALS INC 760 CONSTITUTION DRIVE			

Actual Physical Properties

REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON%IACS	BEND
F00281947	0001	0001	71.4	50.0	24.5	N/A	N/A	N/A

Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.50	0.50	4.90	0.90	1.80	0.10	0.25	0 15	NIZ	NTA	NTA	. 0 05	0.15
Pariation	0.00	0.00	3.80	0.30	1.20	0.00	0.00	0.00	3,175	3/17)	377	0 00	
D32229	.13	.19	4.55	77	1 36	0100	. 34	0.00	1/1/27	N.A.	NA	0.00	0.00
					1.00	. 01	. 14	.03	• 00 .	- 00	.01	. 01	.02

Applicable Requirements:

Description: OD: 1.0000"; Wall: 0.0650"; Round @ AMS4088K AMS-WW-T-700/3A ASTM B210-12 This Product Complies to FAR BAA, DFARS BAA, FAR TAA COMPLIES TO DIN EN 10204 JAN 2005 No Weld Repair. Mercury Free.



Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA
MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA
(DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5
TRADE AGREEMENTS).

Plant Serial: 00029646 Kaiser Order Number: 227053

Line Item: 001





http://Online.KaiserAluminum.com

KAISER ALUMINUM FABRICATED PRODUCTS, LLC 6573 W. WILLIS ROAD CHANDLER, AZ 85226

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms &conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager



TW METALS

Plant Serial: 00029646 Kaiser Order Number: 227053 Line Item: 001



http://Online.KaiserAluminum.com

KAISER ALUMINUM FABRICATED PRODUCTS, LLC 6573 W. WILLIS ROAD CHANDLER, AZ 85226

CUSTOMER PO NUMBER	₹:	CUSTOME	R PART NUMBER:	PRODUCT DESCRIPTIO	N:		
M49392322-1		41879		Drawn Seamless	Tube/Dine		
	AISER ORDER NUMBER: LINE ITEM:		SHIP DATE:	KAISER LOT NUMBER:	ALLOY:	TEMPER:	
226651	001		08/14/2018	F00277201	6061	T6	
WEIGHT SHIPPED: QUANTITY:			B/L NUMBER:	- DIAW/DAF/THKNS:	WIDTH:	LENGTH:	
249.000 LB	470.000 F	PCS	230672				
SHIP TO: TW METALS INC				SOLD TO:		12,000 FT	
V METALS INC 7 ENGLEHARD DRIVE XIT 8A OFF NJ TPK ONROE TWP, NJ 08831 USA				TW METALS INC 760 CONSTITUTION SUITE 204 EXTON, PA 19341			

Actual Physical Properties

/	REFERENCE DAS	H# S	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON% IACS	BEND
(F00277201 00	100	0001	46.6	39.1	19.5	·N/A	N/A	N/A

Chemical Composition (wt%), Aluminum Remainder

LIMITS	94	Fe	0	2.0									
				Mn		Cr		Ti		Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0 40	0 15	1 20	A 25	0.05	0			14.2	.ua.	100
Minimum	0 40	0 00	0.40	0.13	1.20	0.33	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA			0.00
D21756	. 63	.30	.24	- 04	. 95	1.0	0.5	.03	0.0	200		0.00	0.00
				- 0 1	. 20	. 10	.03	.03	.00	.00	.00	.01	.02

Applicable Requirements:

Description: OD: 0.3750"; Wall: 0.0350"; Round @ AMS4082P AMS-WW-T-700/6C ASTM B210-12
WE TAKE EXCEPTION TO PARA. 5.2.1., Per AMS4082P, WAS NOT OILED. This Product Complies to FAR BAA, DFARS BAA, FAR TAA COMPLIES TO DIN EN 10204 JAN 2005
No Weld Repair. Mercury Free.



Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA
MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA
(DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5)
TRADE AGREEMENTS).

Plant Serial: 00029189

Kaiser Order Number: 226651

Line Item: 001





http://Online.KaiserAluminum.com

KAISER ALUMINUM FABRICATED PRODUCTS, LLC 6573 W. WILLIS ROAD CHANDLER, AZ 85226

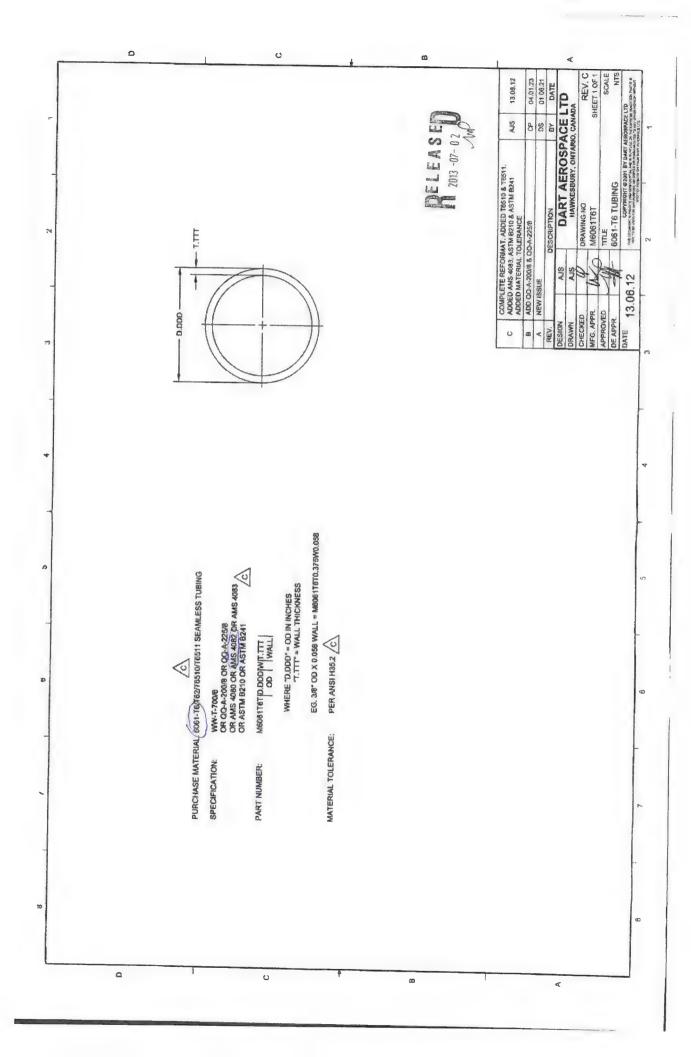
CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager

Plant Serial: 00029189 Kaiser Order Number: 226651

Line Item: 001



	M60617670-375W.035	PO / BATCH NO.:	80041405 /5126578
MATERIAL CERT REC'D: QUANTITY RECEIVED: QUANTITY INSPECTED: QUANTITY REJECTED:	48ft 48ft	THICKNESS ORDERED: THICKNESS RECEIVED: SHEET SIZE ORDERED: SHEET SIZE RECEIVED:	0.375 "

DESCRIPTION	(Ch	CR leck (N)	COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	W	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	D	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	N	AMS 4082
CORRECT THICKNESS	W	N	
PHOTO REQUIRED	Υ	10	
CORRECT REF # TO LINK CERT	D	N	F00277201 0001
CORRECT MATERIAL IDENTFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(V)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Υ	@	
DOES THIS REQUIRE AN EXTRUSION REPORT	Υ	(N)	

RESULTS BEL		SS CHECK.	
HRB	DUR A	DUR D	WEBSTER
		RESULTS BELOW HRB DUR A	1100

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY:	SIGNED OFF BY:
DATE: /8//1/09	DATE:

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

Missen

JIAXING MT STAINLESS STEEL CO.,LTD

MILL TEST CERTIFICATE

EN10204 3.1 CERTIFICATE

ISO 9001: 2015 TUV SUD CERT REGISTRATION No.: 01 100 095954 PED/97/23/CE EURO CERT CERTIFICATE NO:CN.CE.1110S1-02/14



CERTIFICATE NO.: 18MTC-180419769-10 Precisely Right. SALES CONTRACT NO.: M 49380769 PURCHASER: KASUGAI CO., LTD. COMMODITY: STAINLESS STEEL SEAMLESS TUBE ORDER:M 49380769 SPECIFICATION ASTM A269 15a, ASTM A213-17, ASME SA213-17 DATE OF REPORT: 2018-4-19 Dimensions Quantity Steel Grade Heat No. Macroscopic Inspection Delivery O.D. W.T. Length FT Piece (INCH) (INCH (FT) Condition End Cut Appearance TI(304)TP304L N171009AS12 1/2 0.049 20 Pickled & 320 Gri 10460 523 Cold-Drawn Passed Passed Chemical Composition (W.T. %) Element C SI Mn P S Cr Ni Ti Requirements ≤0.035 ≤1.00 \$2.00 ≤0.045 ≤0.030 18.0-20.0 8.0-11.0 Ladle Analysis . 0.014 0.38 1.34 0.031 0.001 18.21 Mechanical Properties Y.S. (MPa) T.S. (MP2) EL (%) Reduction of Area | Hardnes Test Item Rp0.2 Rm Cold Bend Test P.M.I. In2in Z(%) Flaring Test Flattening Test Requirements ≥205 ≥515 ≥35 TEST ≤80 Test Results e=0.09 290 605 60 Passed Passed Passed Passed Non Destructive Tests SOLUTION HEAT TREATMENT: 1050°C X 1.5m/mig # STATES ANATES PM TESTING SOLUTION AS PERFORMED. ASTM A269-15a. ASTM A213-17. ASME SA213-17 Test Item **Eddy Current** PMI TESTING DONE ON EACH TUBE - SATISFACTOR WILLIY Test Requirements ASTM E 426 FREE FROM MERCURY CONTAMINATION MATERIAL IS FREE FROM RADIOACTIVITY VISUAL CHECK IS SATISFACTORY Test Results Passed Eric T. COUNTRY OF ORIGIN: CHINA COUNTRY OF MELT:CHINA ACCEPTED BY I.WE HERE BY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN TESTED AND THE TEST RESULTS ARE IN COMPLIANCE WITH THE TERMS OF THE PURCHASE ORDER OR CONTRACT Approved by: 2. THE CERTIFICATE SHALL NOT BE REPROUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF THE COMPANY.

DELEASE BOTOS AND REFORMAT DIVIC, ADD SPECS (ZN ING. 1).

A NEW ISSUE

REY

NEW ISSUE

DESIGN

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PURCHASE MATERIAL: AISI/304/316 SS SEAMLESS ROUND TUBING SPECIFICATION: ASTM A213 OR ASME SA213 OF 4<u>851M</u> A269

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SPECIFICATION CONTROL DRAWING

WALL THICKNESS TOLERANCE PER ASTM A269 AS FOLLOWS:

OD (IN)
UP TO %
UP TO %
10 TO %
10 TO %
10 TO 1%, EXCL.
10 TO %
10 TO 3%, EXCL.
10 TO 3%, EXCL.
10 TO 5%, EXCL.
10 TO 8. EXCL.

PART NUMBER M304TRID DDD W LTT OD WALL

O

WHERE "D.DDD" = OUTSIDE DIAMETER IN INCHES AND ".TTT" = WALL THICKNESS IN INCHES

EG. 0.375" OD X 0.065" WALL TUBING = M3041R0 375W.065

MATERIAL: M304	TRU.S	SOUN	5.044	_		PO / BATO	CH NO .: POOUL	405/51269
DATE: 18/11/04				-			1001	7 7 1 30
MATERIAL CERT REC'D: 1/45					THIC	KNESS ODD	ERED: _O_SO	s. t/
QUANTITY RECEIVED: CONH				_				
QUANTITY INSPECTED: 6011				-			EIVED: 0.50	D
QUANTITY REJECTED:				_		ET SIZE ORD		
QUANTITY REJECTED:	-			-	SHEE	T SIZE REC	EIVED:	
	T N	CR						
DESCRIPTION		neck				COMMEN	ITC	
	Y/	/N)				OOMINIE	113	
SURFACE DAMAGE	Y	N						
CORRECT FINISH	Y	N						
CORROSION	X	N						
CORRECT GRAIN DIRECTION	X	N						
CORRECT MATERIAL PER M-DRAWING	(V)	N	ASTM	A269				
CORRECT THICKNESS	(X)	N						
PHOTO REQUIRED	Y	N						
CORRECT REF # TO LINK CERT DRRECT MATERIAL IDENTFICATION	Y	N	MT: Ni	71009 AS	12			
CORRECT M# ON THE MATERIAL		N						
DOES THIS MATERIAL REQUIRE	18	N						
ENGINEERING SIGN OFF	Y	N						
DOES THIS REQUIRE AN		14)						
EXTRUSION REPORT	Υ	W						
CUT SAMPLE PIECE	OF	MAT	ERIAL AI	ND PREF	ORM	A HARDNE	SS CHECK	
	R	ECC	ORD RES	ULTS BE	LOW			
PE OF MATERIAL	-		HRC	HRB		DUR A	DUR D	WEBSTER
ZE OF TEST SAMPLE	- 1							
ARDNESS / DUROMETER READIN	10 F				_			
NOTICE OF BUILDING TER READIN		4	1 11					
	tes	sters	located in t	he Quality	Office			
18 INSPECTION						ENGINEER	ING SIGNO	F (if required
INSPECTED BY: A							III O OIGINOI	i (ii required
THO LUTED BT.				5	SIGNE	D OFF BY		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

DATE:

DATE: /8/11/54



CERTIFICATE NO.: 18MTC-0725121-07

JIAXING MT STAINLESS STEEL CO.,LTD

MILL TEST CERTIFICATE

EN10204 3.1 CERTIFICATE

ISO 9001: 2015 TUV SUD CERT REGISTRATION No.: 01 100 095954 PED/97/23/CE EURO CERT CERTIFICATE NO:CN.CE.1110S1-02/14



SALES CONTRACT NO.: M 49385121 PURCHASER: KASUGAI CO., LTD. COMMODITY: STAINLESS STEEL SEAMLESS TUBE ORDER:M 49385121 SPECIFICATION ASTM A269 15a, ASTM A213-17, ASME SA213-17 DATE OF REPORT: 2018-7-25 **Dimensions** Steel Grade Quantity Heat No. O.D. Macroscopic Inspection Delivery Length Process FT Piece INCH) (INCH) Condition **End Cut** TP304/TP304L Appearance NISOLISASON 3/4 0.049 20 5200 Pickled & 320 Grit 260 Cold-Drawn Passed Passed polish Chemical Composition (W.T. %) Element C Si Mn ₽ S CrMo Ti Requirements ≤0.035 ≤1.00 ≤2.00 < 0.045 ≤0.030 18.0-20.0 8.0-11.0 Ladle Analysis 0.017 0.35 1.37 0.036 0.001 18.1 8.01 Mechanical Properties Y.S. (MPa) T.S. (MPa) EL. (%) Test Item Reduction of Area | Hardnes Rp0.2 Rm Cold Bend Test In2in P.M.L. Z (%) Flaring Test Flattening Test Requirements ≥205 ≥515 ≥35 TEST ≤80 Test Results 260 e=0.09 580 75 Passed Passed Passed Passed Non Destructive Tests Remarks: ASTM A269-15a, ASTM A213-17, ASME SA213-17 Test Item TUBES TESTED PER ASTM A1016 **Eddy Current** SOLUTION HEAT TREATMENT: 1050°C X 1.5m/min Test NO WELD REPAIR WAS PERFORMED. TW METALS PMI TESTING DONE ON EACH TUBE - SATISFACTORY IN COMPLIANCE WITH NACE MR0175/ISO 15156-2015 Requirements ASTM E 426 FREE FROM MERCURY CONTAMINATION MATERIAL IS FREE FROM RADIOACTIVITY VISUAL CHECK IS SATISFACTORY Test Results ACCEPTED BY Passed COUNTRY OF ORIGIN: CHINA COUNTRY OF MELT:CHINA I.WE HERE BY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN TESTED AND THE TEST RESULTS ARE IN COMPLIANCE WITH THE TERMS OF THE PURCHASE ORDER OR CONTRACT Prepared by: Approved by: 2.THE CERTIFICATE SHALL NOT BE REPROUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF THE COMPANY

DELEASE

REV NEW ISSUE

REV DESCRIPTION BY DATE OF THE DESCRIPTION BY DEAL OF THE DESCRIPTION BY DEAL OF THE DESCRIPTION BY DEAL OF THE DESCRIPTION BY THE BY THE DESCRIPTION BY THE B

PURCHASE MATERIAL: AISI (304)316 SS SEAMLESS ROUND TUBING

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SPECIFICATION CONTROL DRAWING

WHERE "D. DDD" = OUTSIDE DIAMETER IN INCHES AND ".TTT" = WALL THICKNESS IN INCHES EG. 0.375" OD X 0.065" WALL TUBING = M304TR0 375W.065

M304TR D.DDD W TTT

PART NUMBER

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MILL TEST REPORT

Purchaser.: TW ME	TALS-Cranbu	ity			Certificat	e No.: 2018-02	062		-	
Contract No.: TWM	P.O.No.: M49	9377294								
Commodity: Stainles			G 10		Date of Iss	sue.: 2018.02.0	5			
Process: Cold Drawn		ess ruoes	Specifica	tions:	ASTM A213	17/ASME SA	213-15/AS	STM A	269-15a	EAW
Trocess. Cold Diawn					Delivery C	Condition: OD	Polished to	0 240 (Grit	
Steel Grade	Heat	Number	Lot Number		Dimens			Q	uantity	
TP304/TP304L	YXI	709-608	180127-10		7/8"x0.06	5"x20'	Piece 50	8		Feet
		C	hemical Con	positi	on hy Weigl	ht (%)				.,000
Element	C	Mn	P	S	Si					
Requirements	≤0.035	≤2.00	≤0.045			Cr	Ni		Mo	Co
adle Analysis	0.025		+	≤0.0		18.00-20.00	8.00-11	.00	-	-
		0.62	0.031	0.00	2 0.44	18.10	8.05		-	
Product Analysis	0.026	0.65	0.032	0.002	2 0.43	18.12	8.10			
			Mecha	nical P	roperties					
Test Item	Elonga	tion (% in 2			sile Strengtl	h (PSI)	Yi	eld Str	ength (I	esn
equirements		≥35			Rm	-			0.2%	
est Results		64/63			≥75,000 84,000/85,0	00			0,000	
Test Item	Reduction	n of Area	7.7		Cold Bend	Flaring	T20 44 0		0/43,000	
	Z (%)	Hardne	SS	Test	Test	Flattenin Test	ng I	Plange	P.M.1.
equirements			HRB≤	80	-	22%	e=0.09		Test	Test
est Results	-		72/74		-	Passed	Passed		-	OW
Test Item	Eddy Cur	rent Test	Air Underv Pressure		Ultrasonic Test	Intergranul Corrosion T	ar ac		opic Ins	OK pection
equirements	ASTM	E 426	-		-	ASTM A262	100			
est Results	Pass	ed			-	OK	OK	_		arance K

PED Certified by SZUTEST 2195-PED-1526002

Additional Remarks:

- (1) All tubes annealed to above 1900 Deg F and water quenched below 800 Deg F in 3 minutes
- (2) All tubes tested per ASTM A1016-17
- (3) Materials is NACE MR0103-2007 compliant (per Section 2.5)
- (4) Materials is NACE MR0175/ISO 15156-2003 compliant (per Section 4.2.1)
- (5) In Compliance with EN 10204-3.1
- (6) In Compliance with RoHS Stipulation
- (7) No weld repair performed
- (8) Free from mercury contamination
- (9) Free from radioactive contamination
- (10) Billets melt and pipes/tubes manufactured in China
- (11) All tubes 100% PMI tested
- (12) All tubes 100% Eddy Current tested

CANNOT CERTIFY COMPLIANCE FAR BAA / DFARS BAA / FAR TAA



By:

Jumes Chi

We hereby certify that this report is true and correct.

James Shi / Manager **Quality Control Department**

Jiangsu Pufa Stainless Steel Tube Co., Ltd. No. 99, Xuean Middle Road, Dongchen Town, Rugao City, Jiangsu Province, P.R.China



REV. DESCRIPTION DANG ADD SPECS (7N DB-1) CP 08 10 20

REV. DESCRIPTION DANG ADD SPECS (7N DB-1) CP 08 10 20

REV. DESIGN DANG ADD SPECS (7N DB-1) CP 08 10 20

DESIGN DANG ADD TO BOTH TO BY DATE OF THE OST OF

PURCHASE MATERIAL: AISI (04316 SS SEAMLESS ROUND TUBING

· (a)

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SPECIFICATION CONTROL DRAWING

PART NUMBER M304TR D.DDD W. 1TT OD WALL

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WHERE "D. DDD" = OUTSIDE DIAMETER IN INCHES AND ".TTT" = WALL THICKNESS IN INCHES

EG. 0 375" OD X 0.065" WALL TUBING = M304TR0 375W.065

MATERIAL CERT REC'D: Ves QUANTITY RECEIVED: 2014 QUANTITY INSPECTED: 2014 SHEET SIZE ORDERED: —	
0.077	
QUANTITY INSPECTED: 2014 SHEET SIZE ORDERED.	
THE STATE OF THE PARTY OF THE P	
QUANTITY REJECTED: SHEET SIZE RECEIVED:	
NCR NCR	
DESCRIPTION (Check COMMENTS Y/N)	
SURFACE DAMAGE Y (D)	
CORRECT FINISH / N	
CORROSION Y N	
CORRECT GRAIN DIRECTION (V) N	
CORRECT MATERIAL PER M-DRAWING W N A 57M A 213	
CORRECT THICKNESS (V) N	
PHOTO REQUIRED Y (N)	
CORRECT REF # TO LINK CERT W N N TYX 109 - 608	
CORRECT MATERIAL IDENTFICATION (V) N	
CORRECT M# ON THE MATERIAL (N) N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF Y	
DOES THIS REQUIRE AN EXTRUSION REPORT Y N	
CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK.	
RECORD RESULTS BELOW	
TYPE OF MATERIAL HRC HRB DUR A DUR D WE	BSTER
SIZE OF TEST SAMPLE	
HARDNESS / DUROMETER READING	
testers located in the Quality Office	
QC 18 INSPECTION ENGINEERING SIGNOFF (if r	equired)
INSPECTED BY: SIGNED OFF BY:	E DIESU)
OIONED OIT BI.	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

JIAXING MT STAINLESS STEEL CO., LTD

MILL TEST CERTIFICATE

EN10204 3.1 CERTIFICATE

ISO 9001: 2015 TUV SUD CERT REGISTRATION No.: 01 100 095954 PED/97/23/CE EURO CERT CERTIFICATE NO:CN.CE.1110S1-02/14

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						T POWO C	ENI CEKI	IFICALEN	O.C.N.CE. I	CENT CENT CENT CENTIFICATE NO:CN:CE:1110S1-02/14			
CERTIFICATE NO.: 18MTC-0518117-07	NO.: 18MTC-	0518117-07										Precisely Right.	
COMMODITY: STAINLESS STEEL SI	ACT NO.: M 4 STAINLESS S'	SALES CONTRACT NO.: M 49385117 COMMODITY: STAINLESS STEEL SEAMI ESS THE	TIRE					PURCHASER:KASU	PURCHASER:KASUGAI CO., LTD.	I CO., LTD.			
SPECIFICATIO	N ASTM A269	SPECIFICATION ASTM A269,15a, ASTM A213-17, ASME SA213-17	3-17, ASME	SA213-17				DATE OF I	DATE OF REPORT: 2018-5-18	81-2-18			
Stool Crods	*			D	Dimensions	100		Č	Ouantify				
ange orang		Heat No.	0.D.	W.T.		Length			6	Process	Delivery	Macroso	Macroscopic Ins
Thoughton			(INCH)	(INCH)		(FT)		FT	Piece	6633	Condition	End Cut	Appe
175040175041		N180219AS15	1-1/4	0.12		20		1700	85	Cold-Drawn	Pickled & 320 Grit	Deced	
					Ch	Chemical Composition (W.T. %)	Position (N.T. %)			polish	Lassed	129
Element	C	Si	Mn	Ь	V.	5	N:	n.d.	-				
Requirements	<0.035	<1.00	00 C>	<0.045	0000	10000	INI	MIO			-		t
Ladle Analysis		0.45	0000	C4.0.0	70.030	18.0-20.0	8.0-11.0	•	•	t	1	\$	
Author Andreas		0.45	96.0	0.037	0.004	18.28	80.8	,			1		
						Mechanic	Mechanical Properties	30				1	
Toet Itom	Y.S. (MPa)	T.S. (MPa)		EL. (%)		Dodnotion	A 4.						
Helli see	Rp0.2	Rm		In2in		Neunchon of Area	I OI Area	Hardnes	Cold Bend Test	nd Test	Flaring Toet	Flottonia	T.
Requirements	>205	>515		>35		1	(0)	8			200	rattening rest	lest 8
Test Results	275	509		05				// Mg/	1		1	e=0.09	61
		200		39		,		75	Passed	pes	Passed	Passed	-
		Non Dest	Non Destructive Tests	S		Remarks:				A STEE			
Test Item		Eddy 1	Eddy Current Test			- ASTM A26 - TUBES TES - SOLUTION - NO WELD I	9-15a, ASTP STED PER AS FIEAT TREA SEPAIR WAS	M A213-17, STM A1016 TMENT: 105 S PERFORME	- ASTM A269-15a, ASTM A213-17, ASME SA213-17 - TUBES TESTED PER ASTM A1016 - SOLUTION HEAT TREATMENT: 1050°C X 1.5mmin* NO WELD REPAIR WAS PERFORMED PMI TESTING DONE ON EACH THE	- ASTM A269-15a, ASTM A213-17, ASME SA213-17 - TUBES TESTED PER ASTM A1016 - SOLUTION HEAT TREATMENT: 1050°C X 1.5mmin No WELD REPAIR WAS PERFORMED - PMI TESTING DONE AND A CULTUBE	Windows	TW BRETALS	1 47
Requirements		ASTR	ASTM E 426			- IN COMPLI. - FREE FROM	ANCE WITH 1 MERCURY	IN COMPLIANCE WITH NACE MR0175/1SO FREE FROM MERCURY CONTAMINATION	75/ISO 15156 ATION	2015	3 /	TO 10 10 10	EWO OF
Test Results		Pa	Passed			VISUAL CH COUNTRY C	MATEMAL IS FIKEE FROM RADIOA VISUAL CHECK IS SATISFACTORY COUNTRY OF ORIGIN; CHINA COLINTRY OF METT.	MATENAL IS FREE FROM RADIOACTIVITY VISUAL CHECK IS SATISFACTORY COUNTRY OF ORIGIN: CHINA COLINTRY OF METT-CHINA	CTIVITY		Ş.	ACCEPTED BY	4
I WE HERE BY CEPTIEN THAT THE	DTIEV THAT	TIP SALESTON				- INTERIOR	J. INICLIA	IINA		•			

I.WE HERE BY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN TESTED AND THE TEST RESULT'S ARE IN COMPLIANCE WITH THE TERMS OF THE PURCHASE ORDER OR CONTRACT

2. THE CERTIFICATE SHALL NOT BE REPROUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF

Prepared by:

Approved by:

DELEASE

PURCHASE MATERIAL: AIS\(304\) 316 SS SEAMLESS ROUND TUBING

ASTM A213 OR ASIM A213 OR ASIM A269

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SPECIFICATION CONTROL DRAWING

WALL THICKNESS TOLERANCE PER ASTM A269 AS FOLLOWS:

OD (IN)
OD TOL (IN)
OD TOL (IN)
+0.005
15 TO 1%, EXCL. +0.005
15 TO 8%, EXCL. +0.010
10%
5% TO 8. EXCL. +0.030
110%
110%
110%
110%

M304TR D. DDD. W. TTT OD WALL

PART NUMBER

O

WHERE "D.DDD" = OUTSIDE DIAMETER IN INCHES AND ".TTT" = WALL THICKNESS IN INCHES

EG. 0.375" OD X 0.065" WALL TUBING = M304TR0 375W.066

MATERIAL: <u>M304</u> DATE: <u>18/11/1</u>	TRI	2501	N WS	-	PO / BATCI	H NO.: <u>PO</u>	M1405/5126
QUANTITY INSPECTED: YOUR QUANTITY REJECTED:				SHI	ICKNESS ORDE CKNESS RECE EET SIZE ORDE	ERED:	50 ⁴
QUANTITY REJECTED.				SHE	EET SIZE RECE	IVED:	
DESCRIPTION	(Cr	CR neck (N)			COMMEN	TS	
SURFACE DAMAGE	Y	(1)					
CORRECT FINISH	Y	N					
CORROSION	Y	N					
CORRECT GRAIN DIRECTION	X	N					
CORRECT MATERIAL PER M-DRAWING	Y	N	ASTM,	1269			
CORRECT THICKNESS	(A)	N					
PHOTO REQUIRED	Y	N					
CORRECT REF # TO LINK CERT	Y	N	MT: NIE	30219451	5		
ORRECT MATERIAL IDENTFICATION		N					
CORRECT M# ON THE MATERIAL	Y	N					
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Υ	3					
DOES THIS REQUIRE AN EXTRUSION REPORT	Υ	2					
CUT SAMPLE DIFOR	- 0-	D403					
CUT SAMPLE PIECE	F	RECO	ORD RES	ULTS BELO	M A HARDNE N	SS CHECK.	
VDE 05 111 TEN			HRC	HRB	DUR A	DUR D	WEBSTER
YPE OF MATERIAL							
IZE OF TEST SAMPLE							
ARDNESS / DUROMETER READII	VG						
	te.	sters	located in t	he Quality Offi	ce		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

ENGINEERING SIGNOFF (if required)

DATE:

SIGNED OFF BY:

QC 18 INSPECTION

INSPECTED BY:

DATE: /8/11/12

MTR#:WLPSRW104038.GIF

QUALITY MANAGER

Customer: TWMEXT PO#:M49383265 SO#:LWMK92

Item:S44L00C Bundle:WLRW104TA82-12 Heat#:11P046 Item:S44L00C Bundle:WLRW104TA82-15 Heat#:11P046

EN 10204 3.1

WLPSRW104038

MILL INSPECTION CERTIFICATE 75# M49383265 AG OILLING.

CHANGSHU WALSIN SPECIALTY STEEL CO.,LTD.

COMMODITY: STANLESS STEEL SEAMLESS PIPE	NEALED AND)		-										
CONDITION:	PIPE NEALED AND P S 00 0,0000				SPEC	SPECIFICATION	*		ASTM	ASIZA7	ASTM A31247, A376 14, ASIME SA312-15, SA376-15	SMESA	312-15.5	1376-15						
CATION	NEALED AND S P S S 00000				CERT	CERTIFICATE NO.			201718	2017110625008208	208									
C Si Mn min 0.000 0.000 0.000 FICATION max 0.035 0.750 2.000	0	PICKLED	0		GHADE	ùi	F	TP304304												
FICATION max 0.035 0.750 2.000	0						CHEMIC	CHEMICAL COMPOSITION (WT%)	SITION	(WT%)										
min 0.000 0.000 0.000 max 0.035 0.750 2.000	0	Z	ö	Mo N	3	<u>;=</u>	85 RB	Nb+Ta Co	>		14	1	6	é		-				
тах 0.035 0.750 2.000		8.000	18.000	-			-		-		+-	-	2	5	2	3	7	At+TI	PREN	Ferrite content
	45 0.0300	11.000	20,000				+	-				+-	-							
RESULTS 0.023 0.420 0.910 0.037	37 0.0010	8.080	18250	0.130	0.392			-				-								
SIZE PACKAGE PIECES	WEI	WEIGHT		13	28.0	\$2		EL(50mm)	HARDNESS		FLATTENING		FLARING	5	PITTING	GRAIN		HYDROSTATIC	EDDY	III TDACONIC
OD(*) xWT(sch)xLG(mm) NO.	as	3		2	M	1	170 170	9	HER	cr	TEST	_	TEST	TEST	(mg'dm² day)		Loi No.	3	CURRENT	TEST
3/8/80S-6096-7315 TA82-11 132 3	3070.47	1015	5	600/605	301/301	+	-	GR S.ICR S.	70/02	2	0000	+						MPa		
3/8'40S'6096-7315 TA82-12 19	438.22	114		CICICIO	200	3		2000	107	2	2000	-	-	000	-	-	201709-LG-F31	1	0000	1
T&82.13 Oc	202200	1 20	+	Oloroto Oloroto	303/29	83	-	67/69	80/79.5	35	0000		-	0000	1	~	2017091G-F41	1	0005	-
TA82-15 25	574 1E	8 5	-	612/59/	317/28	86	-	65/64	80/79	6/	0000	-	-	0000	1	-	201709-LG-C82		0000	-
TA92 15	21.70	261	1	DIGORD	303/598	3	-	67/68	60/79.5	9.5	0000	-	1	G000	1	-	201709-1.6-F41	-	0000	-
Ch DI John	300.30	243	+	612/597	317/298	88	_	65/64	80/79	on	0000	-	-	0005	-	1	201709-LG-C82	~	0000	-
			+		1	+	-			1		-								
+	20.00		+			-	\dashv													
010	/301.8/	5002																		

THE CERTIFICATE SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE WRITTEN APPROVAL OF THE COMPANY, MATERIAL FREE FROM MERCURY CONTAMINATION AND BADIDACTIVE CONTAMINATION. Sumplin 3. NO REPAIR BY WELDING.

ACCEPTED BY

JAN 11 18

TW METALS

MATERIAL FREE FROM MERCURY CONTAMINATION COUNTRY OF MELTICHINA, COUNTRY OF MANUFACTURE: CHINA ET STANDARD PRACTICE: ASTM E426

VATER QUENCHED ANNEALING TEMPERATURE: 1050°C REFERENCE DISCONTINUITY: DRILLED HOLE

REE OF RADIATION

ADDRESS: 26 HAIYANG FOAD, HAI'U TOWN, CHANSSHU CITY, JIANGSU PROVINCE, CHINA 215319 TEL: +86-512-6356286 FAX:+86-512-82568027

8-2-CS-OM-100000-00E-0201

SPECIFICATION CONTROL DRAWING

(7)

PURCHASE MATERIAL: TH304TP316 STAINLESS STEEL SEAMLESS PIPE

Ω

O

SPECIFICATION:

(ASTM A3121) ASME SA312

PART NUMBER:

M304PID.DDDIW.TTT OD WALL THICKNESS

WHERE "D.DDD" = OUTSIDE DIAMETER IN INCHES PER NPS DESIGNATION (REF TABLE 1) AND ".TTT" = WALL THICKNESS IN INCHES PER PIPE SCHEDULE (REF TABLE 1)

EG. 3/8 SCHEDULE 40 PIPE = M304P0.675W,091

TABLE 1: DIMENSIONS OF NPS PIPE (REF ANSI B36.10/19)

NPS Designation	Outside Diameter	Pipe So Wall Thiol	Pipe Schedule Wall Thickness (in)
	(iii)	SCHEDULE 40	SCHEDULE 80
1/8	0.405	0.068	0.095
1/4	0.540	0.088	0,119
3/8	0.675	0.091	0 126
1/2	0.840	0.109	0.147
3/4	1.050	0.113	0.154
-	1.315	0.133	0.179
1-1/4	1.660	0.140	0.105
1-1/2	1.900	0.145	0 200
2	2.375	0.154	0.218
2-172	2.875	0.203	0.276
23	3.500	0216	0.300
3-1/2	4 000	0.226	0.318
4	4.500	0.237	0 337

	NEW ISSUE	in the second se	-	
720			5	17.02.24
	DE	DESCRIPTION	BY	DATE
DESIGN	8	DART AFROCEACE	T BO	5
SRAWN	a o	HAWKESBIRY ONTABLO CONTRACT		. د
CHECKED	ML	DRAWING NO.	C. CANAL	
MFG. APPR.	QQ	M304P		REV. A
APPROVED	WWW	TITLE	<i>V</i> 1	SHEET 1 DF 1
JE APPR.	Ch 40	304/316 PIPE		SCALE
DATE 1	17 02 24	1017 BY	MART AEROSPACE LT	TD

RELEASED

۵

U

MATERIAL: M304 P	12	25W.	041	_		PO / BATCH	HNO.: <u>POOL</u>	11405/506
MATERIAL CERT REC'D: Ves QUANTITY RECEIVED: 23.16 QUANTITY INSPECTED: 25.66				 -	THI	CKNESS ORDE CKNESS RECE ET SIZE ORDE ET SIZE RECE	IVED: 0.67	5 "
DESCRIPTION	(Cr	CR neck (N)				COMMEN	TS	
SURFACE DAMAGE	Y	TW						
CORRECT FINISH	W	N						
CORROSION	Y	N						
CORRECT GRAIN DIRECTION	(Y)	Ň						
CORRECT MATERIAL PER M-DRAWING	X	N	A571	1 A342				
CORRECT THICKNESS	(Y)	N	21-11	1 3108				
PHOTO REQUIRED	Y	N						
CORRECT REF # TO LINK CERT	W	N	HT. 11+	2046				
CORRECT MATERIAL IDENTFICATION	Y	N		V/V				
CORRECT M# ON THE MATERIAL	N	N						
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Υ	(2)				V		
DOES THIS REQUIRE AN EXTRUSION REPORT	Υ	(2)						
CUT SAMPLE PIECE	OF	MAT	ERIAL A	ND PRE	FOR	M A HARDNE	SS CHECK	
	F	RECO	RD RES	SULTS BE	ELOV	/	O OHLON.	
			HRC	HRE		DUR A	DUR D	WEBSTER
TYPE OF MATERIAL							50110	WEDOTEK

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY:	SIGNED OFF BY:
DATE: (8/11/12	DATE:

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SIZE OF TEST SAMPLE

HARDNESS / DUROMETER READING



PRECISION TUBE CO.

Control No: 6257

287 WISSAHICKON AVE. NORTH WALES PA 19454

CERTIFIED TEST REPORT

M 4	R PURCI 1938059	HASE LITNI	ORDER 001	NO.	CUST	47579). NO.		PRECISI	ON TUBE	E P/N
						4/5/9			24A03	12505800	005
	F U	75 TU OREST NITED	ALS BEWAY PARK, STATES		298		S	TO :	FW METALS 175 TUBEWAY FOREST PARK JNITED STAT	, GA 30	298
QUANTIT			ESCRIPT					OT	Y. SHIPPED	DATE	SHIPPED
32	04 FT	LENG LGT SHAL FINI OD ID	AL - 60 PER - T C - AMS ASTM-B- GTH - 1 H TOL PE - RO ISH - S .312	40831 210-12 2 FT +.1250 UND TRAIGH 5 +.0	AMS- IN - HT EXAC	.0000 T LENC .0030	IN		3456 FT		2/13/17
				ME	CHANIC	AL PR	OPERT	IES			
SAMPLE	# S	TENSI TRENC P.S.I	STH	YI STRI	ELD ENGTH	EL	ONGAT 2 INC (%)	ION	ROCKWELL HARDNESS	GRA	VERAGE IN SIZE
1 2		46,37 45,71			941 899		12 15				(1-12-)
					DESTRU	מיד זיף:	mt cm				
				-	DEBTIO	CIIVE	TEST	5			
comments:			IES, DF		A COMPLE				S		
				CH	EMICAL	COMP	OSTTT	ON		4	
ALLOY:	6061	HEA			TRAC	EABILI	TY #:	(2927553 PTC1360	77 - KAISER	MINTM(J.LA	TNUECOMEN
	Si	Fe	O.15	Mn	Mg	Cr	Zn	Ti	Al		THAFSIMEN
	0.40		0.15		0.80	0.04			Rem.		

on Precision Tube's sales acknowledgement. Duits compounds, nor with any mercury containing revision of the RoHS Directive (2011/65/EU) and inspection, the product did not come into direct contact with mercury or any of containment. Test results indicate that the material is compliant with the current

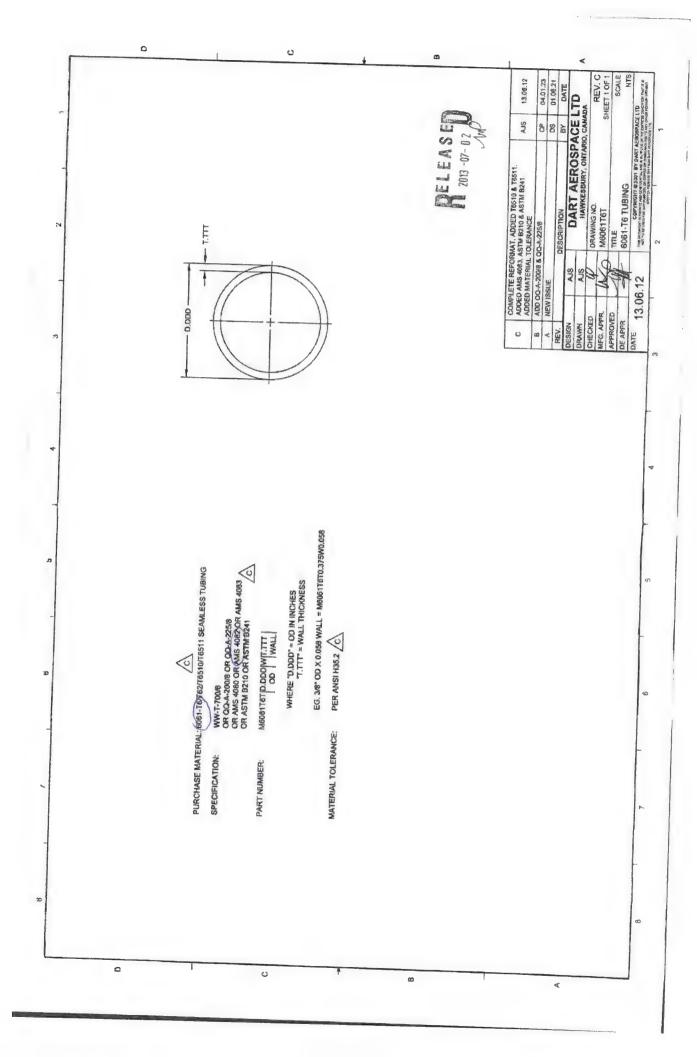
Melted and Manufactured in USA QMS Registered to ISO 9001: 2008

Jennifer James

12/13/17

Quality & Technical Lead

Page: 1 of 1



MATERIAL: MEQ DATE: 18/1	176	7D.	3125 W.	028		PO/BAT	CH NO.: <u>P</u>	041405/8
MATERIAL CERT REC'D: Yes				_	THI	CKNESS ORI	DERED: <u>0.3</u>	iarii
QUANTITY RECEIVED: 1081	-			_	THI	CKNESS REC	EIVED: 0.3	125"
QUANTITY INSPECTED: 1081	-			_			DERED:	
QUANTITY REJECTED:				_		ET SIZE REC		
		ICD	T					
DESCRIPTION	(0	NCR heck //N)				COMME	NTS	
SURFACE DAMAGE	Y	1						
CORRECT FINISH	Y		1					
CORROSION	Ŷ	N						
CORRECT GRAIN DIRECTION	Y	N						
CORRECT MATERIAL PER M-DRAWING	Y	N	AMS	4082				
CORRECT THICKNESS PHOTO REQUIRED	Y	N						
CORRECT REF # TO LINK CERT	Y	N						
ORRECT MATERIAL IDENTFICATION	(A)	N	UT:2	9275	53			
CORRECT M# ON THE MATERIAL	X	N						
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	N						
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	2						
CUT SAMPLE PIECE	OF R	1200	ERIAL AN RD RESU	D PREF LTS BEL HRB	ORM OW			
PE OF MATERIAL	h		-	TIKB	-	DUR A	DUR D	WEBSTER
ZE OF TEST SAMPLE					-			
RDNESS / DUROMETER READIN	G [-			-
	tes	ters l	ocated in th	e Quality (Office			
18 INSPECTION						ENCINEED	INO OLO	
INSPECTED BY:				SI	GNF	D OFF BY:		F (if required)
DATE: /8/11/12			_	-		_		
11/12						DATE:		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in





http://Online.KaiserAluminum.com

KAISER ALUMINUM FABRICATED PRODUCTS, LLC 6573 W. WILLIS ROAD CHANDLER, AZ 85226

CUSTOMER PO NUMB	ER:	CUSTOMER PART NUMBER:	PRODUCT DESCRIPTIO	N:	
M49383418-1		42588	Drawn Spamlage	T h = /D:	
KAISER ORDER NUMBI	ER: LINE ITEM:	SHIP DATE:	Drawn Seamless KAISER LOT NUMBER:	lube/Pipe	TEMPER:
225211	001	03/03/2018	F00262536	6061	
WEIGHT SHIPPED:	QUANTITY:	B/L NUMBER:	DIAM/DAF/THKNS:	WIDTH:	T6)
638.000 LB	230.000 P	CS 228717			
TW METALS INC 135 WEST TUBE CAROL STREAM	WAY DRIVE	SA	SOLD TO: TW METALS INC 760 CONSTITUTION SUITE 204 EXTON, PA 19341	ON DRIVE	12.000 FT

Actual Physical Properties

REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	TT OLIGO			
F00262536	0001	0001			ELONG%	HARDNESS	CON%IACS	BEND
F00262536	0001	. 0002	48.0	43.2	19.0	N/A	N/A	N/A
		0002	48.0	43.2	19.0	N/A	N/A	NI / Z

Chemical Composition (wt%), Aluminum Remainder

						,	,,			or nam	aci		
LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	D:			
Maximum	0.80	0.70	0.40	0 15	1 00	0.05			PD	Bi	Zr	Ea	Tot
TITILUM	0.40	0.00	0.15	0.00	0 80	0 04	0 00	0 00					0.15
D30862	.58	.24	.22	.03	.92	.07	-07	0.00	NA	NA			0.00
								. 02	. 00	.00	.00	. 01	0.2

Applicable Requirements:

Description: OD: 0.6250"; Wall: 0.1250"; Round @ AMS4082P AMS-WW-T-700/6C ASTM B210-12 WW-T-700/6F WE TAKE EXCEPTION TO PARA. 5.2.1., Per AMS4082P, WAS NOT OILED. This Product Complies to FAR BAA, DFARS BAA, FAR TAA COMPLIES TO DIN EN 10204 JAN 2005 No Weld Repair. Mercury Free.



Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA
MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA
(DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5
TRADE AGREEMENTS).

Plant Serial: 00027581

Kaiser Order Number: 225211

Line Item: 001



FABRICATED PRODUCTS

http://Online.KaiserAluminum.com

KAISER ALUMINUM FABRICATED PRODUCTS, LLC 6573 W. WILLIS ROAD CHANDLER, AZ 85226

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms &conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager



Plant Serial: 00027581

Kaiser Order Number: 225211

Line Item: 001

۵ O 13.06.12 ELEASE 2013 -07-02 AJS C ADDED AMS 4083, ASTM B210 & T6511 & ADDED T46510 & T6511 & ADDED AMS 4083, ASTM B210 & ASTM B241 ADDED AMTERIAL TOLERANCE B ADD GGA-2008 & GGA-22566 TITT-DATE 13.06.12 - DODD -MFG. APPR. APPROVED DE APPR. CHECKED DRAWN REV. EG. 3/8" OD X 0.058 WALL = M606176T0.375W0.058 WW-T-70099
OR QO-A-200/8 OR QO-A-226/8
OR AMS 4080 OR AMS 4082 DR AMS 4083
OR ASTM B210 OR ASTM-B241 PURCHASE MATERIAL (6061-19) 62/165/11 SEAMLESS TUBING WHERE 'D.DDD" = OD IN INCHES 'T.TT" = WALL THICKNESS M606116T D.DDD WT.TTT PER ANSI H35.2 C MATERIAL TOLERANCE: SPECIFICATION: PART NUMBER: 0 O m 4

MATERIAL: M 600 DATE: 18/11/	12	67	9-6250	محدا ب		PO / BATO	CH NO.: <u>POC</u>	41405/5/21
MATERIAL CERT REC'D: Yes QUANTITY RECEIVED: 1244 QUANTITY INSPECTED: 1244 QUANTITY REJECTED: 18					SH	HICKNESS ORE IICKNESS REC IEET SIZE ORD EET SIZE RECI	ERED:	35" 35"
DESCRIPTION	(Ch	CR neck (N)				COMMEN	ITS	
SURFACE DAMAGE	_	W						
CORRECT FINISH	8							
CORROSION	Y	D						
CORRECT GRAIN DIRECTION	(1)	N						
CORRECT MATERIAL PER M-DRAWING	8	N	Amo	4081				
CORRECT THICKNESS	(8)	N		100				
PHOTO REQUIRED	Y	W						
CORRECT REF # TO LINK CERT	8	N	41:9	-00262536	_			
CORRECT MATERIAL IDENTFICATION		N						
CORRECT M# ON THE MATERIAL	8	N						
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF		~						
DOES THIS REQUIRE AN	Y	0						
EXTRUSION REPORT	V	0						
- THIS ON THE ORT	Y	N)						
CUT SAMPLE PIECE	OF	MAT	EDIAL /	MD DDEE	0.5			
	RI	FCO	BU BE	SULTS BEL	OK	M A HARDNE	SS CHECK.	
	T		IRC	HRB	.00			
TYPE OF MATERIAL				111/10	_	DUR A	DUR D	WEBSTER
SIZE OF TEST SAMPLE								
ARDNESS / DUROMETER READIN	G							
	tesi	ters la	cated in	the Quality C	Offic	e		
						=		
C 18 INSPECTION								
						ENGINEERI	NG SIGNOF	F (if required)
INSPECTED BY:								(rodalieu)
,,				SI	GN	ED OFF BY:		
DATE: /8/11/12						_		
						DATE:		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

DATE: